National Institute of Environmental Health Sciences

# The impact of telemedicine on greenhouse gas emissions at an academic health science center in Canada

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**Abstract:**

OBJECTIVE: This study estimates the reduction in greenhouse gas (GHG) emissions resulting from 840 telemedicine consultations completed in a 6-month time period. Our model considers GHG emissions for both vehicle and videoconferencing unit energy use. Cost avoidance factors are also discussed. MATERIALS and METHODS: Travel distances in kilometers were calculated for each appointment using postal code data and Google Maps Web-based map calculator tools. RESULTS: Including return travel, an estimated 757,234 km were avoided, resulting in a GHG emissions savings of 185,159 kg (185 metric tons) of carbon dioxide equivalents in vehicle emissions. Approximately 360,444 g of other air pollutant emissions was also avoided. The GHG emissions produced by energy consumption for videoconference units were estimated to be 42 kg of carbon dioxide equivalents emitted for this sample. CONCLUSIONS: The overall GHG emissions associated with videoconferencing unit energy is minor when compared with those avoided from vehicle use. In addition to improved patient-centered care and cost savings, environmental benefits provide additional incentives for the adoption of telemedicine services.

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## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Unspecified Exposure

**Geographic Feature:**

resource focuses on specific type of geography

None or Unspecified

**Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Non-U.S. North America

**Health Impact:**

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

**Medical Community Engagement:**

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Mitigation

**Resource Type:**

format or standard characteristic of resource

Research Article

**Timescale:**

time period studied

Time Scale Unspecified